www.integratecnologia.es / www.libelium.com

IoT Technology: Meshlium Scanner.

People and vehicle monitoring system to control confinement during COVID-19 crisis

integra

libelium
comunicaciones inalámbricas distribuidas

GOAL

To have a tool capable of knowing the movements of people and vehicles in different parts of the city.
In this way, it will be possible to evaluate compliance with the measures adopted and implement improvements in them, if necessary.
This system could serve as a deterrent strategy for uncivic behaviour that does not respect the restrictions of confinement.

The control effectiveness of a police patrol guarding a street is limited to the action time of that unit; with a technology installed 24 hours, this surveillance can be done in real time and would allow crossing data with users detected in other locations.

HOW WE DO IT

The system is composed of a single type of sensor called Meshlium Scanner that is installed in different points of the city and is capable of detecting WiFi and Bluetooth signals emitted by mobile devices of people and vehicles.

TECHNICAL SPECIFICATIONS

Figure : Meshlium unit

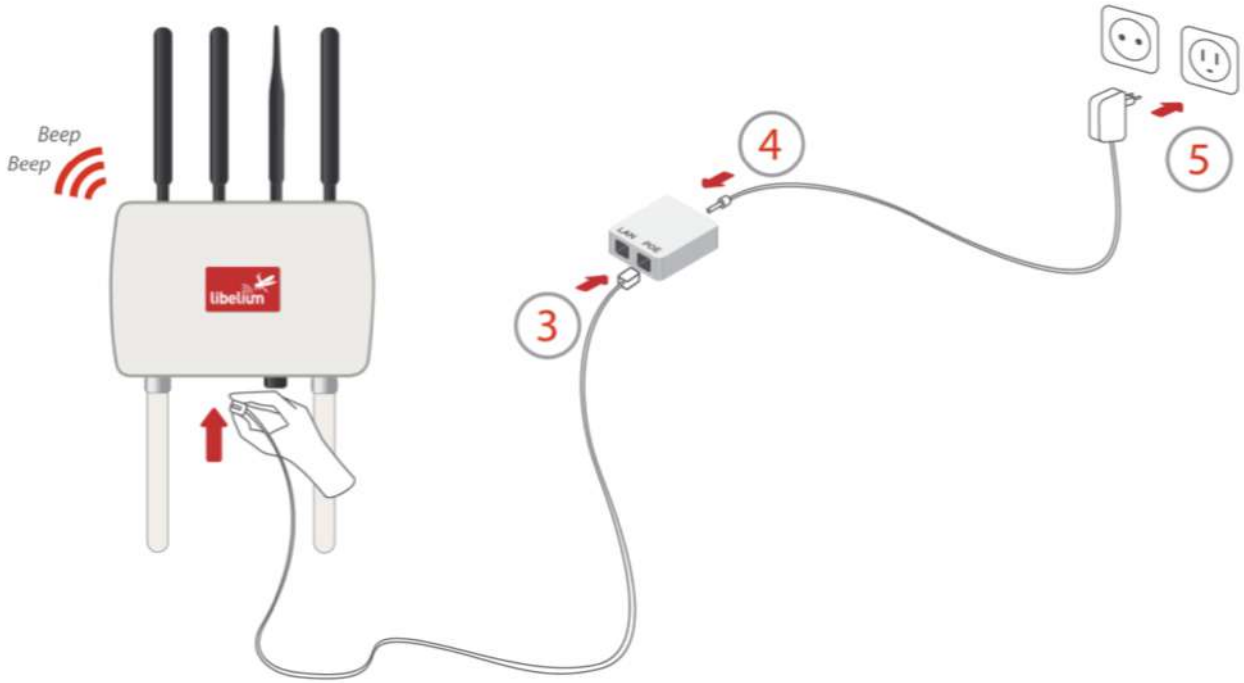
Processor	1 GHz Quad Core (x86)
RAM memory	2 GB (DDR3)
Disk memory	16 GB
Power	6 to 12 W (12 V)
Power source	PoE (Power Over Ethernet)
Max current supply	2 A
Enclosure	Material: Aluminum Dimensions: 255 x 225 x 80mm Weight: 1.9 kg External protection: IP67
Temperature range	-20° C / 50° C
Response time to Ethernet ping	60 s
Time to have all the services running	60 s
Types of power supply*	AC-220 V (DC-12 V)
System	Linux, Debian based
Management software	Meshlium Manager System
Security	Authentication WPA, WPA2, HTTPS

(*) Only with the accessories supplied by Libelium.

Main characteristics:

- Meshlium Scanner allows to detect iPhone and Android devices and, in general, any device that works with WiFi, BLE or Bluetooth interfaces
- The devices can be detected without the need to be connected to a specific access point, allowing the detection of any smartphone, laptop or hands-free car kit device that enters the Meshlium coverage area of approximately 100 meters.
- The idea is to be able to measure the number of people who are present at a certain point in a specific time, allowing the study of the evolution of the flows of people.

TECHNICAL SPECIFICATIONS



Installation needs:

Meshlium has been designed to operate in a vertical position and includes a bracket for installation on a pole or wall.

The device needs to be powered by PoE (Power over Ethernet) at 220V.

Delivery possibilities:

Meshlium allows sending the stored information in two ways:

- Through Ethernet socket connecting it directly to the Internet socket
- Through 4G with SIM card (Nano SIM)

REAL DEVELOPMENT

A first project with this type of technology was installed a few months ago in the water park and has allowed the Zaragoza city council to have a realistic view of the influx of people and vehicles that frequent this very busy area of the city.

This solution, which came up under the name of S-PACES, allows public managers to control the times of passage, entry and exit, as well as the total time that they have remained in the space.
Thanks to this solution, it is possible to draw up occupation reports and to anticipate possible problems of agglomeration.

VISUALIZATION PLATFORM

With this technology, we could have graphs that show the evolution over time of the movement of people in different areas of the city, generate alerts if a certain influx is exceeded or warn if an agglomeration is occurring. It can also be a useful tool to know after the current state, what trends or habits of movements are generated. We can also estimate, based on past data, the flow that will be at a point in the next few hours.

As the device can move, it can be treated as a "mobile people radar" that is placed according to the needs that are identified in different areas of the city. The system could also be connected to police stations to detect areas with a certain saturation of pedestrians and/or vehicles at a given time.

Traffic Alerts

Estimation of nearby inflows

Flow charts (cars and people)

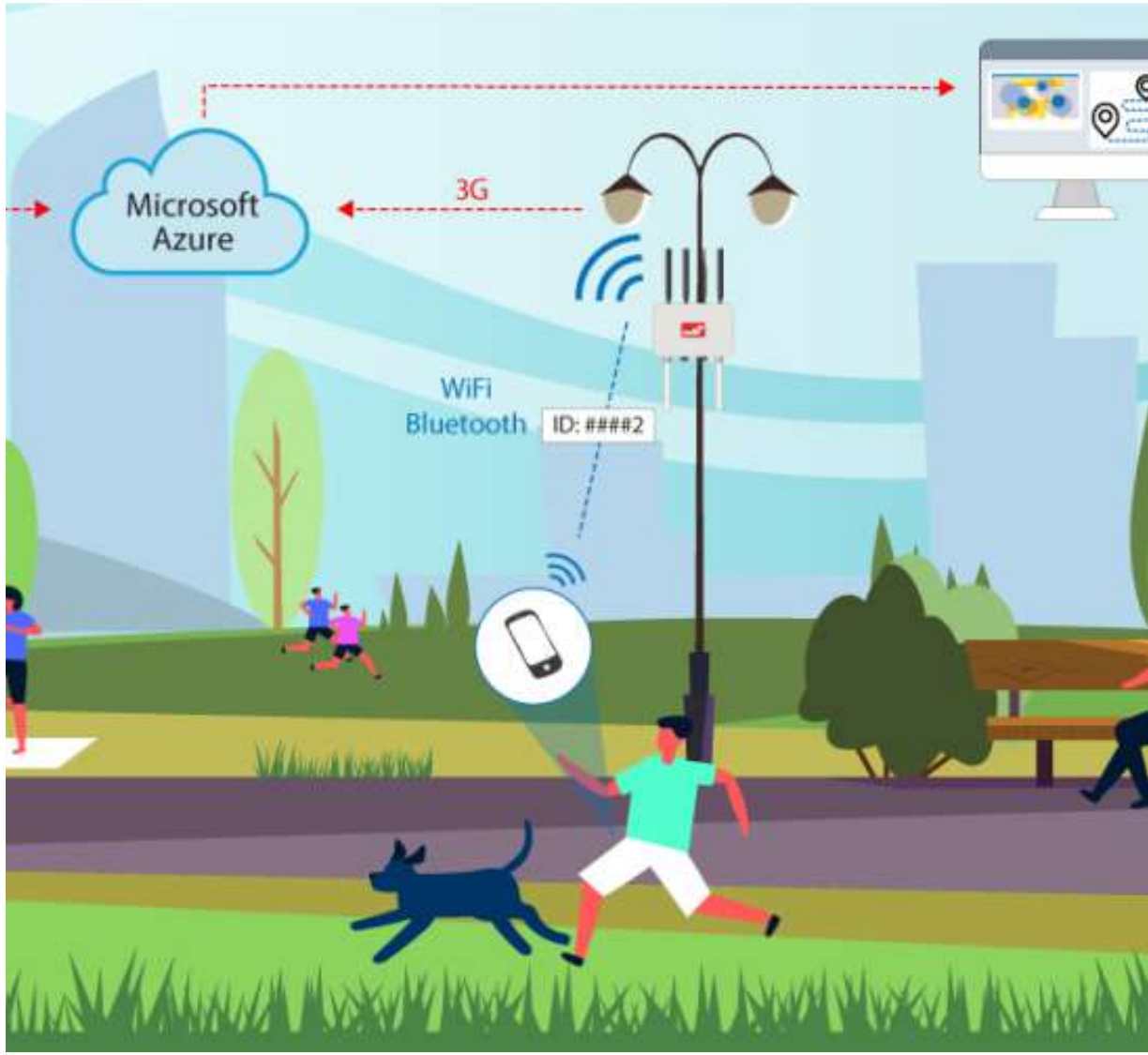
Movement of people
(if we have more than one radar)

REFERENCES

S-PACES en el IoT Marketplace de Libelium: https://www.the-iot-marketplace.com/libelium-integra-s-paces-solution-kit

More efficient public space management with mobile device scanning http://www.libelium.com/more-efficient-public-space-management-with-mobile-device-scanning/

Integra participates in the project for monitoring public spaces https://www.integrainnovation.com/news/integra-participates-project-monitoring-public-spaces



Powering the IoT Revolution

libelium

Contact us